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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,095	06/15/2005	Masayuki Saito	TAN-113	7152
54630 7590 11/13/2007 ROBERTS & ROBERTS, LLP ATTORNEYS AT LAW P.O. BOX 484 PRINCETON, NJ 08542-0484			EXAMINER HEVEY, JOHN A	
			ART UNIT 4116	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/539,095	<b>Applicant(s)</b> SAITO, MASAYUKI	
	<b>Examiner</b> John A. Hevey	<b>Art Unit</b> 4116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/15/05</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Status of Application***

Claims 1-20 are pending and presented for examination.

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 2 recites the

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broad recitation "wherein the protective agent comprises a polymeric material which can be bound to one or more ion species", and the claim also recites "the protective agent has one or more ion species ... bounded thereto" which is the narrower statement of the range/limitation.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanaka et al. (JP 2000-279824).

In regards to claims 1-2, Tanaka teaches a one or two metal colloid wherein the metals are selected from alkaline earth metals, rare earth metals, or others, a chelating agent (equivalent to protective agent) bonded to at least one of the metals, and a process to attach the metal colloid solution to a porous body support to form a catalyst (see Tanaka claims 1-3).

In regards to claims 3-5 and 8-10, Tanaka teaches the use of chelating agent (protective polymer agent) polyallylamine (see [0061]) and poly(N,N-carboxymethyl)allylamine (see Tanaka claim 5). Both of these polymers contain nitrogen, and the latter also including a carboxyl group reading on claims 3 and

8. Furthermore, polyallylamine reads on requirement (a) of claims 4 and 9 having a result of about 0.1.

In regards to claims 6 and 11, Tanaka teaches the catalyst metal is selected from platinum, rhodium, iridium, ruthenium, palladium, silver, gold, osmium, rhenium (see Tanaka claim 6).

In regards to claims 7 and 12-20, Tanaka teaches a catalyst formed by preparing the metal colloid solution described above, adding to porous support, and calcined (see Tanaka [0061]-[0064]).

5. Claims 1-6, and 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirai et al.(US 4888248).

In regards to claims 1-3 and 8, Hirai et al. ("Hirai") teaches a metal colloid comprising at least one metal selected from group consisting of metals of Groups IB, VIIB, and VIII, an amino group-containing compound or polymer, and a second 'protective' polymer adsorbed on said colloidal particles (see claim 1). In this case, both polymers may be considered the 'protective agent' as required by claims 1-2, as each are bound to the metal particles, and 'polymeric material' as required by the instant claims does not limit the claims to a single polymer species. Furthermore, the teaching regarding amino content reads on the nitrogen requirement of claims 3 and 8. In addition, Hirai teaches that the colloid is prepared with a mixed solvent of water and an organic solvent (see Hirai example 1).

In regards to claims 5-6 and 10-11, Hirai teaches said colloid particles bound with a polymer selected from polyallylamine, polyaminostyrene, and polyacrylamide (see Hirai claim 8). The reference also teaches where the metal of the metal colloid particles is selected from gold, silver, platinum, ruthenium, rhodium, palladium, osmium, rhenium, iridium, copper, and nickel clearly anticipating the instant claims 6 and 11 (see Hirai claim 5).

In regards to claims 4 and 9, the requirements of these claims would be inherent to many of the polymers taught by Hirai. For example, the choice of polyacrylamide (see rejection of claim 5 and 10 above) would result in a ratio of 0.1 according to requirement (a) of the instant claims 4 and 9.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
8. Claims 7 and 12-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Hirai et al.(US 488248) in view of Fukunaga et al. (US Pub.2001/0004477).

Claims 7 and 12-20 are drawn to catalyst prepared by calcining the metal colloids taught in claims 1, 2-6, 8-11. Hirai teaches said metal colloids, and further teaches that the colloids can be used for catalysts (see Hirai example 16). The reference differs in that it does not disclose the calcining of the metal colloid to produce a catalyst as taught by Fukunaga et al. who teaches a solution of ultrafine metal particles, thermally decomposed to form a thin film (see Fukunaga claim 5). It would have been obvious to one of ordinary skill in the art to modify the metal colloid of Hirai with the thermal treatment of Fukunaga.

One would have been motivated to make such modification in order to make a useful catalyst product from the metal colloid taught by Hirai. The industrial applicability would have been greatly increased by such modification and one would have been expected reasonable success because the modification is considered well within the level (capability) of the ordinary skill in the art. Therefore, claims 7 and 12-20 are obvious and not patentably distinct over the prior art of the record.

#### ***Double Patenting***

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent

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and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1-3, 6, 8, and 11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 5 of copending Application No. 10/912456. Although the conflicting claims are not identical,



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they are not patentably distinct from each other because the instant claims encompass those of the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

11. Claims 1-2, 6, and 11 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 and 8 of copending Application No. 11/002407. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims encompass those of the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

12. All claims have been rejected, no claims are allowed.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. Hevey whose telephone number is 571-270-3594. The examiner can normally be reached on Monday - Friday 7:30 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vickie Kim can be reached on 571-270-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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VICKIE Y. KIM  
SUPERVISORY PATENT EXAMINER

